

## SEQUENCE LISTING

## (1) GENERAL INFORMATION

- (i) APPLICANT: Presnell, Scott R.  
Gilbert, Teresa
- (ii) TITLE OF THE INVENTION: MAMMALIAN CYTOKINE-LIKE FACTOR-7
- (iii) NUMBER OF SEQUENCES: 43
- (iv) CORRESPONDENCE ADDRESS:  
(A) ADDRESSEE: ZymoGenetics, Inc.  
(B) STREET: 1201 Eastlake Avenue East  
(C) CITY: Seattle  
(D) STATE: WA  
(E) COUNTRY: USA  
(F) ZIP: 98102
- (v) COMPUTER READABLE FORM:  
(A) MEDIUM TYPE: Diskette  
(B) COMPUTER: IBM Compatible  
(C) OPERATING SYSTEM: DOS  
(D) SOFTWARE: FastSEQ for Windows Version 2.0
- (vi) CURRENT APPLICATION DATA:  
(A) APPLICATION NUMBER:  
(B) FILING DATE:  
(C) CLASSIFICATION:
- (vii) PRIOR APPLICATION DATA:  
(A) APPLICATION NUMBER:  
(B) FILING DATE:
- (viii) ATTORNEY/AGENT INFORMATION:  
(A) NAME: Lunn, Paul G  
(B) REGISTRATION NUMBER: 32,743  
(C) REFERENCE/DOCKET NUMBER: 97-15
- (ix) TELECOMMUNICATION INFORMATION:  
(A) TELEPHONE: 206-442-6627  
(B) TELEFAX: 206-442-6678  
(C) TELEX:

0963452,080700

## (2) INFORMATION FOR SEQ ID NO:1:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 736 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (ix) FEATURE:

- (A) NAME/KEY: Coding Sequence
- (B) LOCATION: 57...596
- (D) OTHER INFORMATION:

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GAATTCGGCA CGAGGAGGCG GGCAGCAGCT GCAGGCTGAC CTTGCAGCTT GGCGGA ATG	59
	Met
	1
GAC TGG CCT CAC AAC CTG CTG TTT CTT CTT ACC ATT TCC ATC TTC CTG	107
Asp Trp Pro His Asn Leu Leu Phe Leu Leu Thr Ile Ser Ile Phe Leu	
5 10 15	
GGG CTG GGC CAG CCC AGG AGC CCC AAA AGC AAG AGG AAG GGG CAA GGG	155
Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly	
20 25 30	
CGG CCT GGG CCC CTG GCC CCT GGC CCT CAC CAG GTG CCA CTG GAC CTG	203
Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu	
35 40 45	
GTG TCA CGG ATG AAA CCG TAT GCC CGC ATG GAG GAG TAT GAG AGG AAC	251
Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn	
50 55 60 65	
ATC GAG GAG ATG GTG GCC CAG CTG AGG AAC AGC TCA GAG CTG GCC CAG	299
Ile Glu Glu Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln	
70 75 80	
AGA AAG TGT GAG GTC AAC TTG CAG CTG TGG ATG TCC AAC AAG AGG AGC	347

002090"2545"090700

Arg Lys Cys Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser  
85 90 95

CTG TCT CCC TGG GGC TAC AGC ATC AAC CAC GAC CCC AGC CGT ATC CCC 395  
Leu Ser Pro Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro  
100 105 110

GTG GAC CTG CCG GAG GCA CGG TGC CTG TGT CTG GGC TGT GTG AAC CCC 443  
Val Asp Leu Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro  
115 120 125

TTC ACC ATG CAG GAG GAC CGC AGC ATG GTG AGC GTG CCG GTG TTC AGC 491  
Phe Thr Met Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser  
130 135 140 145

CAG GTT CCT GTG CGC CGC CGC CTC TGC CCG CCA CCG CCC CGC ACA GGG 539  
Gln Val Pro Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly  
150 155 160

CCT TGC CGC CAG CGC GCA GTC ATG GAG ACC ATC GCT GTG GGC TGC ACC 587  
Pro Cys Arg Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr  
165 170 175

TGC ATC TTC TGAATCACCT GGCCCAGAAG CCAGGCCAGC AGCCCGAGAC CATCCTCCT 645  
Cys Ile Phe  
180

TGCACCTTTG TGCCAAGAAA GGCCTATGAA AAGTAAACAC TGACTTTTGA AAGCCAGAAA 705  
AAAAAAAAAA AAAAAAATT CCTGCGGCCG C 736

## (2) INFORMATION FOR SEQ ID NO:2:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 180 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (v) FRAGMENT TYPE: internal

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

09633452-060700

Met Asp Trp Pro His Asn Leu Leu Phe Leu Leu Thr Ile Ser Ile Phe  
 1 5 10 15  
 Leu Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln  
 20 25 30  
 Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp  
 35 40 45  
 Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg  
 50 55 60  
 Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala  
 65 70 75 80  
 Gln Arg Lys Cys Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg  
 85 90 95  
 Ser Leu Ser Pro Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile  
 100 105 110  
 Pro Val Asp Leu Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn  
 115 120 125  
 Pro Phe Thr Met Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe  
 130 135 140  
 Ser Gln Val Pro Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr  
 145 150 155 160  
 Gly Pro Cys Arg Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys  
 165 170 175  
 Thr Cys Ile Phe  
 180

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 397 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

AGGCGGGCAN	AGCTGCAGGC	TGACCTTGCA	GCTTGCGCGA	ATGGA CTGGC	CTCACAACCT	60
GCTGTTTCTT	CTTACCATT	CCATCTTCCT	GGGGCTGGGC	AGCCAGGAGC	CCCCAAAGCA	120
AGAGGAAGGG	GCAAGGGCGG	CCTGGGCCCN	TGGCCTGGCC	TCACCAGGTG	CCACTGGACC	180
TGGTGTACG	GATGAAACCG	TATGCCCGCA	TGGAGGAGTA	TGAGAGGAAC	ATCGAGGAGA	240
TGGTGGCCCA	GCTGAGGAAC	AGCTCANAAG	CTGGCCCAGA	GAAAGTGTGA	GGTCAACTTG	300
CAGCTGTGGA	TGTCCAACAA	GAAGGAGCCT	GTCTCCCTTG	GGGCTACAAG	CATCAACCAC	360

002080"25453960

CGACCCCAGC CGTATCCCCG TGGGACCTTG CCGGGAC

397

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

(vii) IMMEDIATE SOURCE:

(B) CLONE: ZC13265

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

TTACCATTTT CATCTTCC

18

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

(vii) IMMEDIATE SOURCE:

(B) CLONE: ZC13266

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

CCCTTCCTCT TGCTTTTG

18

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

002080"25453453.080700

(vii) IMMEDIATE SOURCE:

(B) CLONE: ZC13326

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

CAAGGATCCC AGCCCAGGAG CCCCAAAAG

29

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 30 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

(vii) IMMEDIATE SOURCE:

(B) CLONE: ZC13330

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

GACCTCGAGT CAGAAGATGC AGGTGCAGCC

30

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 30 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other

(vii) IMMEDIATE SOURCE:

(B) CLONE: ZC13325

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

GTCGAATTCA TGGACTGGCC TCACAACCTG

30

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 base pairs

007080 "25HE9900

(B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Other  
 (vii) IMMEDIATE SOURCE:  
 (B) CLONE: ZC13327

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

GAAGGATCCG AAGATGCAGG TGCAGCC

27

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 10 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Asp	Tyr	Lys	Asp	Asp	Asp	Asp	Lys	Gly	Ser
1				5					10

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 692 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA  
 (ix) FEATURE:

(A) NAME/KEY: Coding Sequence  
 (B) LOCATION: 50...589  
 (D) OTHER INFORMATION:

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

00633450-080700

GGGGTTCCTG GCGGGTGGCA GCTGCGGGCC TGCCGCCTGA CTTGGTGGG ATG GAC TGG	58
Met Asp Trp	
1	
CCG CAC AGC CTG CTC TTC CTC CTG GCC ATC TCC ATC TTC CTG GCG CCA	106
Pro His Ser Leu Leu Phe Leu Leu Ala Ile Ser Ile Phe Leu Ala Pro	
5 10 15	
AGC CAC CCC CGG AAC ACC AAA GGC AAA AGA AAA GGG CAA GGG AGG CCC	154
Ser His Pro Arg Asn Thr Lys Gly Lys Arg Lys Gly Gln Gly Arg Pro	
20 25 30 35	
AGT CCC TTG GCC CCT GGG CCT CAT CAG GTG CCG CTG GAC CTG GTG TCT	202
Ser Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser	
40 45 50	
CGA GTA AAG CCC TAC GCT CGA ATG GAA GAG TAT GAG CGG AAC CTT GGG	250
Arg Val Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Leu Gly	
55 60 65	
GAG ATG GTG GCC CAG CTG AGG AAC AGC TCC GAG CCA GCC AAG AAG AAA	298
Glu Met Val Ala Gln Leu Arg Asn Ser Ser Glu Pro Ala Lys Lys Lys	
70 75 80	
TGT GAA GTC AAT CTA CAG CTG TGG TTG TCC AAC AAG AGG AGC CTG TCC	346
Cys Glu Val Asn Leu Gln Leu Trp Leu Ser Asn Lys Arg Ser Leu Ser	
85 90 95	
CCA TGG GGC TAC AGC ATC AAC CAC GAC CCC AGC CGC ATC CCT GCG GAC	394
Pro Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Ala Asp	
100 105 110 115	
TTG CCC GAG GCG CGG TGC CTA TGT TTG GGT TGC GTG AAT CCC TTC ACC	442
Leu Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr	
120 125 130	
ATG CAG GAG GAC CGT AGC ATG GTG AGC GTG CCA GTG TTC AGC CAG GTG	490
Met Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val	
135 140 145	
CCG GTG CGC CGC CGC CTC TGT CCT CAA CCT CCT CGC CCT GGG CCC TGC	538

09633452-080700



Pro Val Arg Arg Arg Leu Cys Pro Gln Pro Pro Arg Pro Gly Pro Cys  
 150 155 160

CGC CAG CGT GTC GTC ATG GAG ACC ATC GCT GTG GGT TGC ACC TGC ATC 586  
 Arg Gln Arg Val Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile  
 165 170 175

TTC TGAGCCAACC ACCAACCCGG TGGCCTCTGC AACAACCCTC CCTCCCTGCA CCCACT 645  
 Phe  
 180

GTGACCCTCA AGGCTGATAA ACAGTAAACG CTGTTCTTTG TAAAGGA 692

## (2) INFORMATION FOR SEQ ID NO:12:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 180 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (v) FRAGMENT TYPE: internal

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Met Asp Trp Pro His Ser Leu Leu Phe Leu Leu Ala Ile Ser Ile Phe  
 1 5 10 15  
 Leu Ala Pro Ser His Pro Arg Asn Thr Lys Gly Lys Arg Lys Gly Gln  
 20 25 30  
 Gly Arg Pro Ser Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp  
 35 40 45  
 Leu Val Ser Arg Val Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg  
 50 55 60  
 Asn Leu Gly Glu Met Val Ala Gln Leu Arg Asn Ser Ser Glu Pro Ala  
 65 70 75 80  
 Lys Lys Lys Cys Glu Val Asn Leu Gln Leu Trp Leu Ser Asn Lys Arg  
 85 90 95  
 Ser Leu Ser Pro Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile  
 100 105 110  
 Pro Ala Asp Leu Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn  
 115 120 125

002080-25453-080700

Pro Phe Thr Met Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe  
 130 135 140  
 Ser Gln Val Pro Val Arg Arg Arg Leu Cys Pro Gln Pro Pro Arg Pro  
 145 150 155 160  
 Gly Pro Cys Arg Gln Arg Val Val Met Glu Thr Ile Ala Val Gly Cys  
 165 170 175  
 Thr Cys Ile Phe  
 180

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 497 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

GGGGTTCCTG	GCGGGTGGCA	GCTGCGGGCC	TGCCGCCTGA	CTTGGTGGGA	TGGA CTGGCC	60
GCACAGCCTG	CTCTTCCTCC	TGGCCATCTC	CATCTTCCTG	GCGCCAAGCC	ACCCCCGGAA	120
CACCAAAGGC	AAAAGAAAAG	GGCAAGGGAG	GCCCAGTCCC	TTGGCCCCTG	GGCTCATCAG	180
GTGCCGCTGG	ACCTGGTGTC	TCGAGTAAAG	CCCTACGCTC	GAATGGAAGA	GTATGAGCGG	240
AACCTTGGGG	AGATGGTGGC	CCAGCTGAGG	AACAGCTCCG	AGCCAGCCAA	GAAGAAATGT	300
GAAGTCAATC	TACAGCTGTG	GTTGTCCAAC	AAGAGGAGCC	TGTCCCCATG	GGGCTACAGC	360
ATCAACCACG	ACCCAGCCG	CATCCCTGCG	GACTTGCCCC	AGGCGCGGTG	CCTATGTTTG	420
GGTTGCGTGA	ATCCCTTCAC	CATGCAGGAG	GACCGTAGCA	TGGTGAGCGT	GCCAGTG TTC	480
AGCCAGGTGC	CGGTGCG					497

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly  
 1 5 10 15  
 Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg  
 20 25 30  
 Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu  
 35 40 45  
 Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys  
 50 55 60  
 Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro  
 65 70 75 80  
 Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu  
 85 90 95  
 Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met  
 100 105 110  
 Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro  
 115 120 125  
 Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg  
 130 135 140  
 Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
 145 150 155 160

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Gln Pro Arg Ala Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly  
 1 5 10 15  
 Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg  
 20 25 30  
 Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu  
 35 40 45  
 Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys  
 50 55 60  
 Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro  
 65 70 75 80

002080-25452-080700

Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu  
                             85                            90                            95  
 Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met  
                             100                            105                            110  
 Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro  
                             115                            120                            125  
 Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg  
                             130                            135                            140  
 Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
 145                            150                            155                            160

## (2) INFORMATION FOR SEQ ID NO:16:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Gln Pro Arg Ser Pro Lys Ala Lys Arg Lys Gly Gln Gly Arg Pro Gly  
 1                            5                            10                            15  
 Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg  
                             20                            25                            30  
 Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu  
                             35                            40                            45  
 Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys  
                             50                            55                            60  
 Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro  
 65                            70                            75                            80  
 Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu  
                             85                            90                            95  
 Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met  
                             100                            105                            110  
 Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro  
                             115                            120                            125  
 Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg  
                             130                            135                            140  
 Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
 145                            150                            155                            160

09633452-080700

## (2) INFORMATION FOR SEQ ID NO:17:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Ala  
 1 5 10 15  
 Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg  
 20 25 30  
 Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu  
 35 40 45  
 Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys  
 50 55 60  
 Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro  
 65 70 75 80  
 Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu  
 85 90 95  
 Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met  
 100 105 110  
 Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro  
 115 120 125  
 Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg  
 130 135 140  
 Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
 145 150 155 160

## (2) INFORMATION FOR SEQ ID NO:18:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

002080-254E960

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly  
 1 5 10 15  
 Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ala Arg  
 20 25 30  
 Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu  
 35 40 45  
 Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys  
 50 55 60  
 Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro  
 65 70 75 80  
 Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu  
 85 90 95  
 Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met  
 100 105 110  
 Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro  
 115 120 125  
 Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg  
 130 135 140  
 Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
 145 150 155 160

## (2) INFORMATION FOR SEQ ID NO:19:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly  
 1 5 10 15  
 Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg  
 20 25 30  
 Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu  
 35 40 45

002080"254E96D



Val	Arg	Arg	Arg	Leu	Cys	Pro	Pro	Pro	Pro	Arg	Thr	Gly	Pro	Cys	Arg
130						135					140				
Gln	Arg	Leu	Val	Met	Glu	Thr	Ile	Ala	Val	Gly	Cys	Thr	Cys	Ile	Phe
145					150					155					160

## (2) INFORMATION FOR SEQ ID NO:21:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Gln	Pro	Arg	Ser	Pro	Lys	Ser	Lys	Arg	Lys	Gly	Gln	Gly	Arg	Pro	Gly
1				5				10						15	
Pro	Leu	Ala	Pro	Gly	Pro	His	Gln	Val	Pro	Leu	Asp	Leu	Val	Ser	Arg
			20				25						30		
Met	Lys	Pro	Tyr	Ala	Arg	Met	Glu	Glu	Tyr	Glu	Arg	Asn	Ile	Glu	Glu
		35				40					45				
Met	Val	Ala	Gln	Leu	Arg	Asn	Ser	Ser	Glu	Leu	Ala	Gln	Arg	Lys	Cys
	50					55					60				
Glu	Val	Asn	Leu	Gln	Leu	Trp	Met	Ser	Asn	Lys	Arg	Ser	Leu	Ser	Pro
65					70					75				80	
Trp	Gly	Tyr	Ser	Ile	Asn	His	Asp	Pro	Ser	Arg	Ile	Pro	Val	Asp	Leu
				85					90					95	
Pro	Glu	Ala	Arg	Cys	Leu	Cys	Leu	Gly	Cys	Val	Asn	Pro	Phe	Thr	Met
			100					105						110	
Gln	Glu	Asp	Arg	Ser	Met	Val	Ser	Val	Pro	Val	Phe	Ser	Gln	Val	Pro
		115					120				125				
Val	Arg	Arg	Arg	Leu	Cys	Pro	Pro	Pro	Pro	Arg	Thr	Gly	Pro	Cys	Arg
	130					135					140				
Gln	Arg	Phe	Val	Met	Glu	Thr	Ile	Ala	Val	Gly	Cys	Thr	Cys	Ile	Phe
145					150					155					160

## (2) INFORMATION FOR SEQ ID NO:22:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid

002080"254E960



(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

(2) INFORMATION FOR SEQ ID NO:23:

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Ser  
1 5 10 15

Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg  
 20 25 30  
 Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu  
 35 40 45  
 Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys  
 50 55 60  
 Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro  
 65 70 75 80  
 Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu  
 85 90 95  
 Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met  
 100 105 110  
 Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro  
 115 120 125  
 Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg  
 130 135 140  
 Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
 145 150 155 160

## (2) INFORMATION FOR SEQ ID NO:24:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Gln Pro Arg Ser Pro Lys Val Lys Arg Lys Gly Gln Gly Arg Pro Gly  
 1 5 10 15  
 Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg  
 20 25 30  
 Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu  
 35 40 45  
 Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys  
 50 55 60  
 Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro  
 65 70 75 80  
 Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu  
 85 90 95

002080 " 254E950

Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met  
                   100                  105                  110  
 Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro  
                   115                  120                  125  
 Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg  
                   130                  135                  140  
 Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
                   145                  150                  155                  160

## (2) INFORMATION FOR SEQ ID NO:25:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 160 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Gln Pro Arg Val Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly  
   1                  5                  10                  15  
 Pro Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg  
                   20                  25                  30  
 Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu  
                   35                  40                  45  
 Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys  
                   50                  55                  60  
 Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro  
   65                  70                  75                  80  
 Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu  
                   85                  90                  95  
 Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met  
                   100                  105                  110  
 Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro  
                   115                  120                  125  
 Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg  
                   130                  135                  140  
 Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
                   145                  150                  155                  160

## (2) INFORMATION FOR SEQ ID NO:26:

09633452-080700

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 97 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Cys Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser  
 1 5 10 15  
 Pro Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp  
 20 25 30  
 Leu Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr  
 35 40 45  
 Met Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val  
 50 55 60  
 Pro Val Arg Arg Arg Leu Cys Pro Pro Pro Arg Thr Gly Pro Cys  
 65 70 75 80  
 Arg Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile  
 85 90 95  
 Phe

## (2) INFORMATION FOR SEQ ID NO:27:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 100 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly Pro  
 1 5 10 15  
 Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg Met  
 20 25 30  
 Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu Met  
 35 40 45

002080-254E960

Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu  
50 55 60  
Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp  
65 70 75 80  
Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro  
85 90 95  
Glu Ala Arg Cys  
100

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly Pro  
1 5 10 15  
Leu

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Arg Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu  
1 5 10 15  
Glu

## (2) INFORMATION FOR SEQ ID NO:30:

Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg Cys  
1 5 10 15

Pro Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys  
1 5 10 15  
Arg Gln Arg

Pro Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly Pro  
1 5 10 15

Leu Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg Met  
                   20                  25                  30  
 Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu  
                   35                  40                  45

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 70 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Arg Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu  
   1                  5                  10                  15  
 Glu Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys  
                   20                  25                  30  
 Cys Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser  
                   35                  40                  45  
 Pro Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp  
                   50                  55                  60  
 Leu Pro Glu Ala Arg Cys  
   65                  70

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 61 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg Cys  
   1                  5                  10                  15

00633452.080700

Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp Arg Ser  
20 25 30  
Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg Arg Arg Leu  
35 40 45  
Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln Arg  
50 55 60

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 73 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

[illegible]

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 158 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:



Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly Pro Leu  
 1 5 10 15  
 Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg Met Lys  
 20 25 30  
 Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu Met Val  
 35 40 45  
 Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val  
 50 55 60  
 Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly  
 65 70 75 80  
 Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu  
 85 90 95  
 Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu  
 100 105 110  
 Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg  
 115 120 125  
 Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln Arg  
 130 135 140  
 Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
 145 150 155

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 154 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro  
 1 5 10 15  
 His Gln Val Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg  
 20 25 30  
 Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg  
 35 40 45  
 Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu  
 50 55 60  
 Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile Asn  
 65 70 75 80

002080"254552"080700

His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg Cys Leu  
                             85                            90                            95  
 Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp Arg Ser Met  
                             100                            105                            110  
 Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg Arg Arg Leu Cys  
                             115                            120                            125  
 Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln Arg Ala Val Met Glu  
                             130                            135                            140  
 Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
 145                            150

## (2) INFORMATION FOR SEQ ID NO:38:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 151 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

Lys Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln Val  
 1                            5                            10                            15  
 Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu Glu  
                             20                            25                            30  
 Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn Ser Ser  
                             35                            40                            45  
 Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu Trp Met Ser  
                             50                            55                            60  
 Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile Asn His Asp Pro  
 65                            70                            75                            80  
 Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg Cys Leu Cys Leu Gly  
                             85                            90                            95  
 Cys Val Asn Pro Phe Thr Met Gln Glu Asp Arg Ser Met Val Ser Val  
                             100                            105                            110  
 Pro Val Phe Ser Gln Val Pro Val Arg Arg Arg Leu Cys Pro Pro Pro  
                             115                            120                            125  
 Pro Arg Thr Gly Pro Cys Arg Gln Arg Ala Val Met Glu Thr Ile Ala  
                             130                            135                            140  
 Val Gly Cys Thr Cys Ile Phe  
 145                            150

002080" 254550 090700

His 1	Pro	Arg	Asn	Thr 5	Lys	Gly	Lys	Arg	Lys 10	Gly	Gln	Gly	Arg	Pro 15	Ser
Pro	Leu	Ala	Pro	Gly	Pro	His	Gln	Val	Pro	Leu	Asp	Leu	Val	Ser	Arg
			20					25					30		
Val	Lys	Pro	Tyr	Ala	Arg	Met	Glu	Glu	Tyr	Glu	Arg	Asn	Leu	Gly	Glu
		35					40					45			
Met	Val	Ala	Gln	Leu	Arg	Asn	Ser	Ser	Glu	Pro	Ala	Lys	Lys	Lys	Cys
	50					55					60				
Glu	Val	Asn	Leu	Gln	Leu	Trp	Leu	Ser	Asn	Lys	Arg	Ser	Leu	Ser	Pro
65					70					75					80
Trp	Gly	Tyr	Ser	Ile	Asn	His	Asp	Pro	Ser	Arg	Ile	Pro	Ala	Asp	Leu
			85						90					95	
Pro	Glu	Ala	Arg	Cys	Leu	Cys	Leu	Gly	Cys	Val	Asn	Pro	Phe	Thr	Met
			100					105					110		
Gln	Glu	Asp	Arg	Ser	Met	Val	Ser	Val	Pro	Val	Phe	Ser	Gln	Val	Pro
		115					120					125			
Val	Arg	Arg	Arg	Leu	Cys	Pro	Gln	Pro	Pro	Arg	Pro	Gly	Pro	Cys	Arg
	130					135					140				
Gln	Arg	Val	Val	Met	Glu	Thr	Ile	Ala	Val	Gly	Cys	Thr	Cys	Ile	Phe
145					150					155					160

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Arg Asn Thr Lys Gly Lys Arg Lys Gly Gln Gly Arg Pro Ser Pro Leu  
 1 5 10 15  
 Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg Val Lys  
 20 25 30  
 Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Leu Gly Glu Met Val  
 35 40 45  
 Ala Gln Leu Arg Asn Ser Ser Glu Pro Ala Lys Lys Lys Cys Glu Val  
 50 55 60  
 Asn Leu Gln Leu Trp Leu Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly  
 65 70 75 80  
 Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Ala Asp Leu Pro Glu  
 85 90 95  
 Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu  
 100 105 110  
 Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg  
 115 120 125  
 Arg Arg Leu Cys Pro Gln Pro Pro Arg Pro Gly Pro Cys Arg Gln Arg  
 130 135 140  
 Val Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
 145 150 155

## (2) INFORMATION FOR SEQ ID NO:41:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 153 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Lys Arg Lys Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro His  
 1 5 10 15  
 Gln Val Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met  
 20 25 30  
 Glu Glu Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn  
 35 40 45

002080"25455"080700

Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu Trp  
 50 55 60  
 Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile Asn His  
 65 70 75 80  
 Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg Cys Leu Cys  
 85 90 95  
 Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp Arg Ser Met Val  
 100 105 110  
 Ser Val Pro Val Phe Ser Gln Val Pro Val Arg Arg Arg Leu Cys Pro  
 115 120 125  
 Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln Arg Ala Val Met Glu Thr  
 130 135 140  
 Ile Ala Val Gly Cys Thr Cys Ile Phe  
 145 150

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 128 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Met Lys Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu  
 1 5 10 15  
 Met Val Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys  
 20 25 30  
 Glu Val Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro  
 35 40 45  
 Trp Gly Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu  
 50 55 60  
 Pro Glu Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met  
 65 70 75 80  
 Gln Glu Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro  
 85 90 95  
 Val Arg Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg  
 100 105 110  
 Gln Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe  
 115 120 125

004080"25452"080700

## (2) INFORMATION FOR SEQ ID NO:43:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 157 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

```

Arg Ser Pro Lys Ser Lys Arg Lys Gly Gln Gly Arg Pro Gly Pro Leu
 1             5             10             15
Ala Pro Gly Pro His Gln Val Pro Leu Asp Leu Val Ser Arg Met Lys
      20             25             30
Pro Tyr Ala Arg Met Glu Glu Tyr Glu Arg Asn Ile Glu Glu Met Val
      35             40             45
Ala Gln Leu Arg Asn Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val
      50             55             60
Asn Leu Gln Leu Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly
65             70             75             80
Tyr Ser Ile Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu
      85             90             95
Ala Arg Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu
      100            105            110
Asp Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg
      115            120            125
Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln Arg
      130            135            140
Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile
145            150            155

```

002080" 25455950